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CLAIMS

What is claimed is:

1. An automotive vehicle seat back assembly, comprising:

5 a. a first portion;

b. a second portion formed separately from the first portion but which
is joined with the first portion via at least one joint; wherein at least
one of the first portion or the second portion is fabricated from a
molded plastic and further is defined to include a plurality of
10 individual integrated reinforcement structures for defining an
integrated reinforcement structure pattern;

c. an attachment assembly for anchoring said seat back to at least
one body in white portion of said automotive vehicle;

15 wherein the seat back assembly is capable of (1) withstanding without
rupture at least about 13000 Newtons in the direction in which the seat faces in a
plane, parallel to the longitudinal centerline of the vehicle; and (2) upon rapid
acceleration up to about 20 to about 30 g, exhibiting substantially no fragmentation
of the seat back with at least a 36 kg mass placed behind the seat back.

20 2. The assembly of claim 1, further comprising an adhesive for bonding
the first portion with the second portion to define the joint.

3. The assembly of claim 1, wherein the first portion and the second
portion are formed of dissimilar materials.

4. The assembly of claim 3, wherein the dissimilar materials are plastic.

25 5. The assembly of claim 4, wherein one of the first or second portions is
blow molded and the other of the first or second portions is injection molded.

6. The assembly of claim 1, wherein each of the first and second portions
are injection molded plastic.

7. The assembly of claim 1, wherein the material of the first portion and the material of the second portion are from the same plastic family.

8. The assembly of claim 1, further comprising upholstery selected from a suitable fabric cover, leather or suede cover, simulated leather or suede cover, or a combination thereof; a carpet or other floor covering; or a combination thereof.

9. The assembly of claim 1, wherein the first and second portions are shaped for defining a grab handle.

10. The assembly of claim 1, wherein the molded plastic is a microcellular foam plastic.

10 11. An automotive vehicle seat back assembly, comprising:

a. a first portion;

15 b. a second portion formed separately from the first portion but which is joined with the first portion via at least one adhesive joint; wherein the first portion and the second portion are each fabricated from a molded high strength thermoplastic resin selected from styrenics, polyamides, polyolefins, polycarbonates, polyesters or mixtures thereof; further wherein the first portion and the second portion are defined to include a plurality of individual integrated reinforcement structures for defining an integrated reinforcement structure pattern; and further wherein the first portion and the second portion includes an open internal spacing between the portions; and

20 c. an attachment assembly for anchoring said seat back to at least one body in white portion of said automotive vehicle;

25 wherein said seating assembly is capable of (1) withstanding without rupture at least about 13000 Newtons in the direction in which the seat faces in a plane, parallel to the longitudinal centerline of the vehicle; and (2) upon rapid acceleration up to about 20 to about 30 g, exhibiting substantially no fragmentation of the seat back with at least a 36 kg mass placed behind the seat back.

12. The assembly of claim 11, wherein at least one of the open spaces defines a channel that runs to a vent opening in one or both of the first or second portions for functioning as a duct and communicating air through the vent opening.

5 13. The assembly of claim 11, further comprising a soft-touch surface over at least one of the first or second portions.

14. The assembly of claim 11, further comprising a separately fabricated component that is housed in the open internal spacing.

15. The assembly of claim 11, wherein the first portion includes polycarbonate/acrylonitrile/butadiene styrene.

10 16. The assembly of claim 11, wherein the second portion includes an olefinic material.

17. The assembly of claim 15, wherein the second portion includes a high density olefin.

15 18. The assembly of claim 16, wherein the high density olefin is high density polyethylene.

19. The assembly of claim 11, wherein one of the first or second portions is blow molded from a parison that has been extruded of one or more inner and outer layers of different plastics.

20 20. The assembly of claim 18, further comprising comprising upholstery selected from a suitable fabric cover, leather or suede cover, simulated leather or suede cover, or a combination thereof; a carpet or other floor covering; or a combination thereof.

21. An instrument panel assembly, comprising:

- 25 a. at least one cross-vehicle molded plastic panel support structure having a hollow passageway and adapted for receiving a vehicle instrument panel component; and
- b. a vehicle dashboard joined with the panel support structure; and including a show surface attached to the panel support structure.

22. The instrument panel assembly of claim 21, wherein the panel support structure includes polycarbonate/acrylonitrile/butadiene styrene.

23. The instrument panel assembly of claim 21, wherein the show surface includes a molded-in-color thermoplastic polyolefin.

5 24. A method for making an automotive vehicle seat back, comprising the steps of:

a. molding a first portion of a first plastic material;

b. molding a second portion of a plastic material separately from the first portion; and

10 c. joining the first portion and the second portion to form a seat back that is capable of (1) withstanding without rupture at least about 13000 Newtons in the direction in which the seat faces in a plane, parallel to the longitudinal centerline of the vehicle; and (2) upon rapid acceleration up to about 20 to about 30 g, exhibiting
15 substantially no fragmentation of the seat back with at least a 36 kg mass placed behind the seat back.

25. The method of claim 24, wherein the first plastic material includes polycarbonate/acrylonitrile/butadiene styrene.

20 26. The method of claim 25, wherein the second portion is a second plastic material that is a high density olefin.

27. The method of claim 26, wherein the second plastic material is a high density polyethylene.

28. The method of claim 24, wherein the molding of the first material is injection molding.

25 29. The method of claim 28, wherein the molding of the second material is selected from injection molding or blow molding.

30. The method of claim 24, further comprising attaching an external reinforcement panel to the seat back.

31. The method of claim 24, wherein the joining step includes bonding the first portion and the second portion with an adhesive.

32. The method of claim 24, wherein the joining step includes bonding the first portion and the second portion with a weld.

5 33. The method of claim 30, wherein the joining step includes bonding the first portion and the second portion with an adhesive.

34. The method of claim 27, wherein the joining step includes bonding the first portion and the second portion with an adhesive and the first plastic material includes polycarbonate/acrylonitrile/butadiene styrene.

10 35. The method of claim 24, further comprising incorporating into spacing between the first portion and the second portion of the seat back a component selected from a duct, a motor, a heating unit, a cooling unit, a speaker for a sound system, an entertainment device, a communications device, a global positioning sensor, a transducer, a solenoid, a sensor, an air bag component, lighting, a wiring
15 harness, a pump, a seat belt tensioner, a seat belt retractor, lumbar support, a seat belt web, a tethers, a compass, a thermometer, or a material for reducing noise or vibration or a combination thereof.

36. The method of claim 24, further comprising configuring at least one of
20 the seat back portions for supporting, receiving or defining another component selected from a picnic tray, tools, a tonneau cover, a ski rack, an arm rest, a foot rest, head rest, a recliner, flooring, a cosmetic feature, a cargo net, a cargo restraint, supportive hooks, a closure panel, an assistive device for persons with disabilities, adjustable features, papers (e.g., owner's manuals), map pockets, fluid or paper
25 dispensing devices, cup holders, storage containers, an integrated handle, a telescoping handle, wheels, a tether anchor, a child seat, an arm rest, a leg rest, a tie down member, a trough, a tonneau cover bracket, a transparent opening or a combination thereof.

37. A method for making an automotive vehicle seat back, comprising the
30 steps of:

- a. molding a first portion of a first plastic material that includes polycarbonate/acrylonitrile/butadiene styrene;
 - b. molding a second portion separately from the first portion, the second material being a high density polyethylene; and
 - 5 c. joining the first portion and the second portion to form a seat back with an adhesive, a weld or a combination thereof.
38. The method of claim 37, wherein both the first portion and the second portion are injection molded.
39. The method of claim 37, wherein at least one of the first portion or the
10 second portion is blow molded.
40. The method of claim 24 together with material types and components in between.
41. A method for making an automotive vehicle seat back, comprising the steps of:
- 15 a. preparing a first portion of a first plastic material;
 - b. preparing a second portion of a plastic material;
 - c. incorporating into spacing between the first portion and the second portion of the seat back a component selected from a duct, a motor, a heating unit, a cooling unit, a speaker for a sound system, an
20 entertainment device, a communications device, a global positioning sensor, a transducer, a solenoid, a sensor, an air bag component, lighting, a wiring harness, a pump, a seat belt tensioner, a seat belt retractor, lumbar support, a seat belt web, a tethers, a compass, a thermometer, or a material for reducing noise
25 or vibration or a combination thereof; and
 - d. joining the first portion and the second portion to form a seat back.
42. The method of claim 41 wherein the seat back is capable of (1) withstanding without rupture at least about 13000 Newtons in the

direction in which the seat faces in a plane, parallel to the longitudinal centerline of the vehicle; and (2) upon rapid acceleration up to about 20 to about 30 g, exhibiting substantially no fragmentation of the seat back with at least a 36 kg mass placed behind the seat back.

- 5 43. The method of claim 42, wherein the first portion and the second portion are joined during the preparing steps by being blow molded together.
44. The method of claim 42, wherein the first portion and the second portion are prepared separately.
- 10 45. The method of claim 42, wherein the first portion or the second portion is made of a plastic material that includes polycarbonate/acrylonitrile/butadiene styrene or a high density polyethylene.
46. A method for making an automotive vehicle seat back, comprising the steps of:
- 15 a. preparing a first portion of a first plastic material;
- b. preparing a second portion of a plastic material;
- c. joining the first portion and the second portion to form a seat back; and
- 20 d. configuring at least one of the seat back portions for supporting, receiving or defining another component selected from a picnic tray, tools, a tonneau cover, a ski rack, an arm rest, a foot rest, head rest, a recliner, flooring, a cosmetic feature, a cargo net, a cargo restraint, supportive hooks, a closure panel, an assistive device for persons with disabilities, adjustable features, papers (e.g., owner's manuals), map pockets, fluid or paper dispensing devices, cup holders, storage containers, an integrated handle, a telescoping handle, wheels, a tether anchor, a child seat, an arm rest, a leg
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rest, a tie down member, a trough, a tonneau cover bracket, a transparent opening or a combination thereof.